NCTIP

National Center for Transportation and Industrial Productivity
New Jersey Institute of Technology

To: **Nick Vitillo**

Title: **NCTIP Quarterly Reports**

Time Period: **Third Quarter, 2003**

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Quarterly Progress Report

Project Title:	**Survey of Driver Perceptions of Railroad and Light Rail Warning Devices/Grade Crossings - Year 2**
RFP Number: 2001-33	**NJDOT Research Project Manager:** Karl Brodtman
Task Order Number/Study Number: NCTIP-33	**Pincipal Investigator:** Jeng, One-Jang
Period Starting: 1/1/2002 - 12/31/2003 (Start-End Date of Study)	**Period Ending:** 09/02/2003

Task	% of Total	% of Task this quarter	% of Task to date	% of Total Complete
Phase I-Literature Search: Conduct a literature search of the current state of the practice	10	100	100	10
Phase II-Research Approach: Task 1: Determine the various types of railroad and light rail highway grade crossings in New Jersey	5	100	100	5
Task 2: Conduct a survey of other states for information	10	100	100	10
Task 3a: Catalog the individual active and passive railroad/light rail crossing devices in New Jersey	5	10	100	5
Task 3b: Arrange the devices in groups that would be found at typical crossings as found in the classification system in Task 1	5	10	100	5
Task 4: Setup of laboratory experimental tasks, video and still image editing, programming for recording subject responses and data processing	15	20	100	15
Conduct a pilot study for the experiments; finalize experiment procedures	10	50	100	10
Conduct formal laboratory experiments	10	40	75	7.5
Perform data processing and statistical analysis for the laboratory experiments	10	5	5	0.5
Task 5: Technical Memorandum on the driver manual chapters, exam questions and answers	10	50	50	5
Task 6: Prepare and deliver the finalt report	10	0	0	0
Final Report				
TOTAL	100 %			73.0 %

1.Progress this quarter by task:

During the reported quarter, the research team of this project visited more railroad crossings at Morristown and Jersey City for additional signs (stop and yield signs) used at railroad crossings. First, the team identified sites where there are stop signs according a New Jersey railroad crossing database. Then the team members visited those sites. It was found that all the stop signs posted near the railroad crossings are not designed for railroad

crossings but for roadways running parallel to the railroad tracks. Video recordings were taken on those sites. The research team did not find any yield sign posted near railroad crossings in all the sites been visited. Night time driving scenes were also videotaped from railroad crossings at North Brunswick.

The research team has recruited five truck drivers to participate in the laboratory experiment. It will also recruit five bus drivers to participate in the laboratory experiment. All the truck and bus drivers are from local industries and schools around Newark.

The contract agreement for appointing Dr. Srini as a consultant has been materialized with the help of NJIT Office of Sponsored Programs. Currently Dr. Srini is working on drafting a railroad crossing sections for all New Jersey driver's manuals.

2. Proposed activities for next quarter by task:

The research team will finish data collection for the laboratory experiment in the next quarter. Statistical analyses will be performed to learn from drivers' perspective what they perceive upon seeing various warning signs and traffic control devices. The information will be fed into the railroad crossing sections for all New Jersey driver's manuals. There will be a performance evaluation on drier's perception and understanding of warning signs and responses at railroad crossing comparing subjects who read the proposed railroad crossing section for the New Jersey driver's manual and those who read the current New Jersey driver's manual.

3. List of deliverables provided in this quarter by task (product date):

4. Progress on implementation and training activities:

5. Problems/proposed solutions:

6. Budget summary:

Total Project Budget (# Years) 2 Year	$207,454.00
Total Project Expenditure to date	$140,424.00
% of Total Project Budget Expended	67.69%
Task Order Number/ Study Number 2 Year	NCTIP-33
Current Task Order Budget (# of Years)	$80,790.00
Actual Expenditure to Date Against Current Task Order	$57,975.00
% of Current Task Order Budget Expended	71.76%

Quarterly Progress Report

Project Title:	**Fatigue Management, Rail Operations Personnel - Year II**
RFP Number: 36	**NJDOT Research Project Manager:** Karl Brodtman, NJDOT
Task Order Number/Study Number: 36	**Pincipal Investigator:** Jeng, One-Jang
Period Starting: 1/1/2002 - 8/31/2003 (Start-End Date of Study)	**Period Ending:** 09/02/2003

Task	% of Total	% of Task this quarter	% of Task to date	% of Total Complete
Phase I : Literature Search	5	0	100	5
Phase II : Research Approach Task 1 : Detailed Literature Search	10	0	100	10
Task 2: Presentation of Literature Findings	5	0	100	5
Task 3: Determine Existing HOS guidelines	25	0	100	25
Task 4: Prepare HOS model for Crew Schedule Assessment and Design Tool	30	0	60	18
Task 5: Prepare a Request for Proposal	15	15	15	2.25
Task 6: Reporting	10	10	40	4
Final Report				
TOTAL	100 %			69.3 %

1.Progress this quarter by task:

A revised draft survey was submitted to NJTransit for review. The team is attempting to schedule a meeting with UTU representatives to review and work out the logistics of administering the survey. However, due to a changeover in union leadership, we have been unsuccessful in arranging this meeting. Our subconsultant, CTI, reviewing several Requests for Proposal for other projects with the intent of using these as a basis from which to develop the RFP for this project. Due to delays in setting up the project initially and getting the survey administered, the team is asking for a six-month no cost extension for this project.

2. Proposed activities for next quarter by task:

Finalize and administer survey and summarize results. Based on this information, the research team can commence subsequent tasks.

3. List of deliverables provided in this quarter by task (product date):

4. Progress on implementation and training activities:

5. Problems/proposed solutions:

6. Budget summary:

Quarterly Progress Report

Total Project Budget (# Years)	2 Year	$221,017.00
Total Project Expenditure to date		$153,165.00
% of Total Project Budget Expended		69.30%
Task Order Number/ Study Number	1 Year	36
Current Task Order Budget (# of Years)		$61,065.00
Actual Expenditure to Date Against Current Task Order		$42,318.00
% of Current Task Order Budget Expended		69.30%

Quarterly Progress Report

Project Title:	**Pedestrian Safety and Mobility Aids for Crossings and Access to Bus Stops**
RFP Number: 42	**NJDOT Research Project Manager:** Nancy Ciaruffoli, NJDOT
Task Order Number/Study Number: NCTIP-42	**Pincipal Investigator:** Jeng, One-Jang
Period Starting: 1/1/2002 - 06/30/2003 (Start-End Date of Study)	**Period Ending:** 09/02/2003

Task	% of Total	% of Task this quarter	% of Task to date	% of Total Complete
Task 1.1 Literature Search	10	100	100	10
Task 2.1 ¡V Develop Initial Criteria for Site Selection	10	100	100	10
Task 2.2 - Select Potential Candidate Sites	5	100	100	5
Task 2.3 - Perform Initial Evaluation	10	75	100	10
Tasks 2.4 - Recommend Final Locations	10	10	100	10
Task 2.5 Develop Innovative Solutions Strategies and Aids	20	80	100	20
Task 2.6 ¡V Perform Detailed Evaluation	20	70	100	20
Task 2.7 - Develop Implementation Plan	10	80	100	10
Task 2.8 Final Report	5	100	100	5
Final Report				
TOTAL	100 %			0.0 %

1.Progress this quarter by task:

The research team submit its revised final report draft to NJDOT on the first week of August. The team has been working on comments received from NJDOT.

The final report will be completed and submitted before the September Quarterly Progress Meeting.

2. Proposed activities for next quarter by task:

3. List of deliverables provided in this quarter by task (product date):

4. Progress on implementation and training activities:

5. Problems/proposed solutions:

6. Budget summary:

Quarterly Progress Report

Total Project Budget (# Years) 1 Year	$133,469.00
Total Project Expenditure to date	$119,038.00
% of Total Project Budget Expended	89.19%
Task Order Number/ Study Number 1 Year	NCTIP-42
Current Task Order Budget (# of Years)	$70,825.00
Actual Expenditure to Date Against Current Task Order	$69,489.00
% of Current Task Order Budget Expended	98.11%

Quarterly Progress Report

Project Title:	**Improving Public Transit Schedules, Timetables People Can Actually Read**
RFP Number: 22-2002	**NJDOT Research Project Manager:** Edward Kondrath
Task Order Number/Study Number: 38	**Pincipal Investigator:** Fallat, George Alexander
Period Starting: Jan 1, 2003 - Dec 31, 200 (Start-End Date of Study)	**Period Ending:** 09/02/2003

Task	% of Total	% of Task this quarter	% of Task to date	% of Total Complete
Task 1, Phase 1 – Literature Search	10	25	100	10
Task 1, Phase 2. Presentation of Literature Review Findings	5	100	100	5
Task 2: Develop a Proposed Methodology	10	25	50	5
Task 3: Apply New Wayfinding Methods	10	10	10	1
Task 4: Administer Survey	15	50	50	7.5
Task 5 – Compile Survey Results	10	25	25	2.5
Task 6 – Prepare Guidelines	20	0	0	0
Task 7 - Reporting	20	20	60	12
Final Report				
TOTAL	100 %			43.0 %

1.Progress this quarter by task:

The project team has obtained several bus schedules from various bus transit agencies. Two focus group meetings were held this quarter. The first group consisted of NJ TRANSIT employees who are bus users. This meeting provided an opportunity to not only gain insight and feedback, but enabled the team to test the moderator guide. The second focus group consisted of NJ TRANSIT bus customers as well as non-users. Meeting minutes have been prepared and document the results of these meetings. The team also met with Mr. Robert Lily of NJ TRANSIT, who is responsible for bus schedule production. This meeting was very helpful in identifying some of the logistics issues involved in producing the bus schedules and better defining parameters for the development of the prototypes.

2. Proposed activities for next quarter by task:

Conduct focus group meetings.

Prepare draft prototype schedules and maps based on input from NJTransit as well as the results of the focus group meeting.

3. List of deliverables provided in this quarter by task (product date):

Task 1. Draft Literature Search submitted. Task 2. Detailed literature submitted. Task 3. Focus group sessions completed and draft meeting minutes prepared.

4. Progress on implementation and training activities:

None to date

5. Problems/proposed solutions:

6. Budget summary:

Total Project Budget (# Years)	1 Year	$157,239.00
Total Project Expenditure to date		$67,613.00
% of Total Project Budget Expended		43.00%
Task Order Number/ Study Number	1 Year	38
Current Task Order Budget (# of Years)		$117,662.00
Actual Expenditure to Date Against Current Task Order		$50,595.00
% of Current Task Order Budget Expended		43.00%

Quarterly Progress Report

Project Title:	**Computer Modeling and Simulation of New Jersey Signalized Highways - Year II**
RFP Number: 2001-01	**NJDOT Research Project Manager:** Karl Brodtman, NJDOT
Task Order Number/Study Number: 32	**Pincipal Investigator:** Chien, Steven I-Jy
Period Starting: 1/1/02 - 12/31/03 (Start-End Date of Study)	**Period Ending:** 09/02/2003

Task	% of Total	% of Task this quarter	% of Task to date	% of Total Complete
Review of Literature and Current Practice	4	0	100	3.8
Prototype Development	10	0	95	9.5
Site Identification and Data Collection Needs	10	0	100	10
Data Collection	15	0	100	15
Network Modeling with SYNCHRO and CORSIM	15	10	80	12
Optimization of Signal Timing Plan with SYNCHRO and CORSIM	20	10	80	16
Generation of Traffic Signal Directives	10	45	50	5
Development of Tutorial for the NJDOT Engineers in the SYNCHRO Environment	8	10	15	1.2
Final Report with Documentation of SYNCHRO Models	8	0	30	2.4
Final Report				
TOTAL	100 %			74.9 %

1.Progress this quarter by task:

A model of the optimized intersection was developed for Route 23. The results of the optimization have been summarized and are being prepared for approval by NJDOT. These results were also added to the Route 23 summary report that should be completed by the end of September. The first pass timing directives were also created and will be provided and checked by NJDOT in the first weeks of September.The base model was developed for Route 42/322 and was submitted to NJDOT on August 20th, 2003, during a technical meeting. Traffic count data provided by Louis Berger and Associates was entered and was "balanced" where appropriate. The additional information requested by NJIT for Route 42/322 prior to finalizing the base model was entered.

2. Proposed activities for next quarter by task:

1. Validate the Route 42/322 base model in Synchro. 2. Finalize timing directives and draft report for the Route 23 optimization. 3. Commence optimization of the Route 42/322 model.

3. List of deliverables provided in this quarter by task (product date):

SYNCHRO 5.0 Networks (Rt 23 and Rt 42/322)

4. Progress on implementation and training activities:

none yet

5. Problems/proposed solutions:

none yet

6. Budget summary:

Total Project Budget (# Years)	2 Year	$222,078.00
Total Project Expenditure to date		$155,456.00
% of Total Project Budget Expended		70.00%
Task Order Number/ Study Number	2 Year	32
Current Task Order Budget (# of Years)		$72,493.00
Actual Expenditure to Date Against Current Task Order		$66,622.00
% of Current Task Order Budget Expended		91.90%

Quarterly Progress Report

Project Title:	**Corrugated Steel Culvert Pipe Deterioration -Year I**
RFP Number: 2002 – 02	**NJDOT Research Project Manager:** Mr. Robert Sasor
Task Order Number/Study Number: TO-42	**Pincipal Investigator:** Meegoda, Jay N.
Period Starting: 1/1/2003 - 12/31/2004 (Start-End Date of Study)	**Period Ending:** 09/02/2003

Task	% of Total	% of Task this quarter	% of Task to date	% of Total Complete
Phase I – Literature Search	9.5	0	100	9.5
Phase II – Task 1	6	85	100	6
Phase II – Task 2	6	85	100	6
Phase II – Task 3	6	40	50	3
Phase II – Task 4	6	0	0	0
Phase II – Task 5	6	0	0	0
Phase II – Task 6	9.5	25	25	2.375
Phase II – Task 7	6	0	0	0
Phase II – Task 8	15.0	0	0	0
Phase II – Task 9	15.0	25	25	3.75
Final Report	15.0	0	0	0
TOTAL	100 %			30.6 %

1.Progress this quarter by task:

APPROXIMATELY 31%

Literature search, Phase II Tasks 1 and 2 completed.

Approximately 30% of Phase II tasks 3, 6 and 9 are completed.

Phase II Task 1 - Contacted other state DOT's making sure to include the Northeast states, to find out their experience with using CSCP. Prepared Technical Memorandum summarizing same.

Phase II Task 2 - Studied methods for inventorying, inspecting, and cleaning CSCP used by other states. Determined optimum inspection and cleaning schedules and the best techniques and equipment to use.

Phase II Task 3 - Studied means of assessing the condition of CSCP, estimating pipe deterioration rates, and predicting service life for pipes in different parts of the state and with different uses. Developed predictive model and submitted technical paper to TRB. Executed Outside User Agreement with USEPA to allow use of their Edison Facility for flow testing of used CSCP.

Phase II Task 6 - Study methods of inspection and maintenance record keeping and data storage used by other states. Examined data entry forms.

Phase II Task 9 -Determine the conditions for which CSCP should be used in new construction.

Phase II Task 3 - Study means of assessing the condition of CSCP, estimating

pipe deterioration rates, and predicting service life for pipes in different parts of the state and with different uses.
Phase II Task 6 - Study methods of inspection and maintenance record keeping and data storage used by other states. Examine data entry forms. Consider the benefits of storing CSCP pipe data in a centralized database, so that it could be easily accessed statewide to facilitate decision-making.
Phase II Task 9 - Determine the conditions for which CSCP should be used in new construction. Expanded literature review.

2. Proposed activities for next quarter by task:

Phase II Task 3 - Study means of assessing the condition of CSCP, estimating pipe deterioration rates, and predicting service life for pipes in different parts of the state and with different uses. Develop Research Plan and Health and Safety Plan for flow testing CSCP at USEPA Edison.
Phase II Task 5 - Determine the best methods and materials for repairing, rehabilitating, or replacing CSCP based on the experiences of other states. Study economic analyses of both methods and materials.
Phase II Task 6 - Study methods of inspection and maintenance record keeping and data storage used by other states. Consider the benefits of storing CSCP pipe data in a centralized database, so that it could be easily accessed statewide to facilitate decision-making.
Phase II Task 9 - Determine the conditions for which CSCP should be used in new construction.

3. List of deliverables provided in this quarter by task (product date):

Phase II Task 1 - Contact other state DOT's, Technical Memorandum summarizing same.

4. Progress on implementation and training activities:

None

5. Problems/proposed solutions:

None

6. Budget summary:

Total Project Budget (# Years)	2 Year	$282,766.00
Total Project Expenditure to date		$32,000.00
% of Total Project Budget Expended		11.32%
Task Order Number/ Study Number	1 Year	TO-42
Current Task Order Budget (# of Years)		$91,863.00
Actual Expenditure to Date Against Current Task Order		$32,000.00
% of Current Task Order Budget Expended		34.83%

Quarterly Progress Report

Project Title:	**Alternate Performance Measures for Evaluating Congestion**
RFP Number: 2001-20	**NJDOT Research Project Manager:** Nancy Ciaruffoli
Task Order Number/Study Number: NCTIP-41	**Pincipal Investigator:** Rowinski, Jakub P
Period Starting: 01/01/2002 - 03/31/2003 (Start-End Date of Study)	**Period Ending:** 09/02/2003

Task	% of Total	% of Task this quarter	% of Task to date	% of Total Complete
Task 1.1 Literature Search	8	0	100	8
Task 1.2 Literature Search Presentation	8	0	100	8
Task 2.1 Current Congestion Data	8	60	100	8
Task 2.2 Existing Performance Data	8	80	100	8
Task 2.3 Existing Congestion Baseline	16	20	100	16
Task 2.4 Labor and Industry Data	8	0	100	8
Task 2.5 Determine Costs of Congestion	16	40	100	16
Task 2.6 Study Program Effectiveness	12	100	100	12
Task 2.7 Quarterly Progress and Final Report	8	40	100	8
Task 3.1 Demonstration/Initial Training	4	0	0	0
Task 3.2 Follow-up Training Session	4	0	0	0
Final Report				
TOTAL	100 %			92.0 %

1.Progress this quarter by task:

Phase 2 – Research approach

Task 1: Research, collect and analyze current congestion data, methodology and practices

The work on this task was completed this quarter.

Task 2: Collect and analyze existing congestion performance measure data

The data collection and analysis was completed this quarter.

Task 3: Determine an existing congestion level baseline with feedback from focus groups

The survey responses were collected, compiled, analyzed and summarized in appropriate tables and charts in preparation for the final report on the findings.

Task 4: Gather labor and industry data to include employment and inflation, income, population costs/percentages.

This task was completed during the previous quarter.

Task 5: Develop a program that will determine the costs of congestion.

The program was updated in terms of methodology and input data. The current results have been summarized in preparation for the final report.

Task 6: Study the program and its effectiveness in predicting or assessing the cost of congestion

Once the new runs were completed, the program results were checked for accuracy.

Task 7: Prepare quarterly progress and final report with appropriate tables, graphs and charts.

The draft final report was prepared and submitted to the project manager. The report will be finalized once the project manager and clients review and comment on the draft.

2. Proposed activities for next quarter by task:

Task 2.7: Incorporate feedback into the final report

Phase III - Implementation and training of the congestion program

3. List of deliverables provided in this quarter by task (product date):

Draft Final Report

4. Progress on implementation and training activities:

None

5. Problems/proposed solutions:

None

6. Budget summary:

Quarterly Progress Report

Total Project Budget (# Years)	1 Year	$170,509.00
Total Project Expenditure to date		$154,109.00
% of Total Project Budget Expended		90.38%
Task Order Number/ Study Number	1 Year	NCTIP-41
Current Task Order Budget (# of Years)		$0.00
Actual Expenditure to Date Against Current Task Order		$0.00
% of Current Task Order Budget Expended		0.00%

Quarterly Progress Report

Project Title:	**Improvement of Continuity Connections Over Fixed Piers - Year 3**
RFP Number: 2000-23	**NJDOT Research Project Manager:** Tony Chmeil
Task Order Number/Study Number: TO-27	**Pincipal Investigator:** Saadeghvaziri, M. A.
Period Starting: 1/1/2001 - 12/31/2003 (Start-End Date of Study)	**Period Ending:** 09/02/2003

Task	% of Total	% of Task this quarter	% of Task to date	% of Total Complete
Literature review	4	0	100	4
FEA work	21	4.7	100	21
Instrumentation/In-field measurements	21	0	100	21
Comparison/FEA	14	14.3	100	14
Recommendations for changes to existing design	9	0	100	9
Interim report	2	0	100	2
New connection	16	0	62.5	10
Laboratory tests	5	40	80	4
Specs.	5	20	20	1
Final report	3	0	0	0
Final Report				
TOTAL	100 %			86.0 %

1.Progress this quarter by task:

Two more specimen were built. A total of 5 tests have been conducted. For some tests specimen tested are repaired and used. Results are being investigated. Preliminary analysis point to the effectiveness of the method in providing adequate strength to make the system continuous for deck load too. This will also put the bottom in compression preventing development of positive moment cracks due to time dependent effects.

Outline of an application tool for analysis and design of this class of bridges is developed.

2. Proposed activities for next quarter by task:

Build and test additional specimens.

Start coding of the application tool.

3. List of deliverables provided in this quarter by task (product date):

4. Progress on implementation and training activities:

5. Problems/proposed solutions:

6. Budget summary:

Quarterly Progress Report

Total Project Budget (# Years)	3 Year	$226,319.00
Total Project Expenditure to date		$107,696.00
% of Total Project Budget Expended		47.59%
Task Order Number/ Study Number	2 Year	TO-27
Current Task Order Budget (# of Years)		$152,376.00
Actual Expenditure to Date Against Current Task Order		$107,696.00
% of Current Task Order Budget Expended		70.68%

Quarterly Progress Report

Project Title:	**Study to Determine the Need for Innovative Concept of Container Transportation System**
RFP Number:	**NJDOT Research Project Manager:** Dr. Nazhat Aboobaker
Task Order Number/Study Number: NCTIP-044	**Pincipal Investigator:** Dimitrijevic, Branislav
Period Starting: 01/01/03 - 12/31/03 (Start-End Date of Study)	**Period Ending:** 09/02/2003

Task	% of Total	% of Task this quarter	% of Task to date	% of Total Complete
Task 1: Literature Search	10	15	100	10
Task 2: Screening Evaluation	20	15	15	3
Task 3: Optimal System Design Selection Framework	30	0	0	6
Task 4: Case Studies of Selected Technologies	30	10	10	3
Task 5: Training and Implementation	10	0	0	0
Final Report				
TOTAL	100 %			22.0 %

1.Progress this quarter by task:

Phase I – Task 1: Following the June 6 meeting with the members of the RSIP and a follow-up phone conference on June 19, the research team expanded the literature review to include information on possible methods for evaluation of innovative technologies. Various studies have been identified and reviewed that offer valuable examples of how transportation projects can be evaluated and what criteria or types of criteria should be included in the evaluation and further on in the analysis of the proposed technologies. The results of the literature review dealing with evaluation methods and techniques are being assembled as a Technical Memorandum and will be presented at a follow up meeting with the RSIP.

Phase II – Task 1: Research team has first concentrated on defining selection criteria that will be used to evaluate technologies. They include basic economic criteria, such as various costs, but also non-monetary criteria such as capacity, expandability (scalability) and interoperability of the proposed technologies, compatibility with existing modes of freight transportation (intermodal compatibility), ROW requirements, and safety characteristics. The research team is in the process of identifying suitable measures for each of the criteria that will enable different technologies to be compared. Reconnaissance data of the geologic and environmental conditions throughout the study area were collected for the purposes of technology screening and route evaluation. Information sources include the USGS, NJDEP, Dept. of Resource Conservation, Rutgers Engineering Soil Survey, PANYNJ, NJDOT, and NJ

Meadowlands Commission. The categories of data comprise surficial deposits, bedrock type and depth, wetlands, aerial photos, and contaminated sites. An engineering decision matrix was developed that compares the structural, foundation, and environmental requirements of the various freight mover technologies.

Phase II – Task 3: The reconnaissance data gathered during Task 1 have been digitized in preparation for analyzing the alternative alignments and construction costs. All data have been converted into a GIS format using ArcView 3.2 and are structured into convenient layer themes, e.g., aerial photos, surficial geology, bedrock geology. Several sample alignments have been analyzed to test the reconnaissance data set.

2. Proposed activities for next quarter by task:

Phase II – Task 1: The screening engineering decision matrix will be merged with the multi-criteria evaluation matrix to generate a rank ordering of the various freight mover technologies with regard to technical, economic, and environmental feasibility.

Phase II – Task 2: Selection framework will be developed to accommodate identification of the most suitable technology for implementation.

Phase II – Task 3: Selected case studies of the most promising freight mover technologies will be developed. The reconnaissance GIS data set will be used to analyze alternative alignments and construction costs for each case study.- identification of the fatal flows for each of the feasible technologies

3. List of deliverables provided in this quarter by task (product date):

N/A

4. Progress on implementation and training activities:

N/A

5. Problems/proposed solutions:

6. Budget summary:

Total Project Budget (# Years)	1 Year	$133,748.00
Total Project Expenditure to date		$29,500.00
% of Total Project Budget Expended		22.06%
Task Order Number/ Study Number	1 Year	NCTIP-044
Current Task Order Budget (# of Years)		$133,748.00
Actual Expenditure to Date Against Current Task Order		$29,500.00
% of Current Task Order Budget Expended		22.06%

Quarterly Progress Report

Project Title:	**Computer Modeling and Simulation of New Jersey Transit Penn Station Newark**
RFP Number:	**NJDOT Research Project Manager:**
Task Order Number/Study Number: TO-45	**Pincipal Investigator:** Juckes, Juckes P
Period Starting: 02/01/03 - 12/31/2003 (Start-End Date of Study)	**Period Ending:** 09/02/2003

Task	% of Total	% of Task this quarter	% of Task to date	% of Total Complete
Definition of Study Area	5	0	100	5
Data Review and Collection	15	0	100	15
Existing Condition Simulation Network Modeling	25	10	100	25
Improvement Scenario Simulation Models	35	15	95	33.25
Final Report and Presentation	15	50	75	11.25
Future work	5	10	10	0.5
Final Report				
TOTAL	100 %			90.0 %

1.Progress this quarter by task:

The project is currently come to an end and is in a stage of various presentations to the staff at NJTransit. All of the simulation models have been summarized and reported in the form of a detailed power point presentation

2. Proposed activities for next quarter by task:

During the next quarter the final report and a CDRom of the presentation will be created.

3. List of deliverables provided in this quarter by task (product date):

4. Progress on implementation and training activities:

5. Problems/proposed solutions:

6. Budget summary:

Total Project Budget (# Years) 1 Year	$30,466.00
Total Project Expenditure to date	$27,420.00
% of Total Project Budget Expended	90.00%
Task Order Number/ Study Number 1 Year	TO-45
Current Task Order Budget (# of Years)	$30,466.00
Actual Expenditure to Date Against Current Task Order	$27,420.00
% of Current Task Order Budget Expended	90.00%

Quarterly Progress Report

Project Title:	**Economic and Quality of Life Impacts of Route 21 Freeway Construction - Year II**
RFP Number: 2001-08	**NJDOT Research Project Manager:** R Sasor
Task Order Number/Study Number: NCTIP-034	**Pincipal Investigator:** Golub, Eugene
Period Starting: 01/01/2002 - 12/31/2006 (Start-End Date of Study)	**Period Ending:** 09/02/2003

Task	% of Total	% of Task this quarter	% of Task to date	% of Total Complete
Phase I: Literature Review	3	0	100	3
Task 1: Pre-construction, economic conditions	4	0	100	4
Task 2: Familiarization with Route 21	4	25	100	4
Task 3: Familiarization with Context Design	4	0	100	4
Task 4: Familiarization with Baseline data	4	25	100	4
Task 5: Develop study methodologies	75	5	25	18.75
Task 6: Prepare interim annual reports	3	0	25	0.75
Task 7: Prepare quarterly / final reports	3	6	26	0.78
Final Report				
TOTAL	100 %			39.3 %

1.Progress this quarter by task:

Phase1 The literature search is complete.
Task3 Familiarization with CSD is almost complete. Additional work includes discussion with other NJDOT personnel as to how CSD was applied on this project.

Task2 Familiarization with the Rt 21 design and Baseline Data is complete. The NJDOT data has been obtained and has been reviewed. Additional data is being developed from other local and County Sources.

Task4 The project team has complted review of NJDOT 2001 baseline data.

Task5 A photographic record of the project has been undertaken and is near completion. It includes photoscapes of the area in proximity of the project as well as photos of the areas thought to be of importance by the NJDOT. these records are compiled on CD's.

Professional staff from both communities were individually interviewed and a compilation is being developed. Further, the local merchant associations have likewise been interviewed.

Surveys have been sent to elected officials & professional staff in both

municipalities. Individual surveys are being conducted with merchants in both municipalities.

Traffic counts are being conducted at key intersections as per NJDOT original studies.

Noise readings are being taken at key locations as per original NJDOT studies.

Data is being compiled for Clifton on all sales of properties and the variation in prices as well as the total assessed valuation of the town for the last 10 years. Similar data has been requested from Passaic.

Accident data in the two towns is in the process of being developed to demonstrate changes that have occurred in the last few years.
Additional photography has been taken at important locations.
Base photographic record is being digitized for a permanent record that is easily organized.
We are obtaining sales reports from City of Passaic.
Surveys have been digitized and analyzed.
An interim annual report has been submitted in draft form. This has been finalized this quarter.

The photographic record taken during the project has been digitized and is in the process of being organized into a usable computer file.

Planning for the second year analysis and data gathering has been completed.
The photographic record taken during the project has been digitized and has been organized into a usable computer file.
The Interim Annual Report has been reviewed by NJDOT, Clifton & Passaic and their comments included in the report.

2. Proposed activities for next quarter by task:

New data will be gathered in surveys, photography and published economic data and accident reports.

3. List of deliverables provided in this quarter by task (product date):

4. Progress on implementation and training activities:

5. Problems/proposed solutions:

6. Budget summary:

Quarterly Progress Report

Total Project Budget (# Years)	5 Year	$293,327.00
Total Project Expenditure to date		$110,650.00
% of Total Project Budget Expended		37.72%
Task Order Number/ Study Number	2 Year	NCTIP-034
Current Task Order Budget (# of Years)		$55,165.00
Actual Expenditure to Date Against Current Task Order		$45,000.00
% of Current Task Order Budget Expended		81.57%

Quarterly Progress Report

Project Title:	**Good Neighbor Privacy Fence - Year II**
RFP Number: 2001-14	**NJDOT Research Project Manager:** R Sasor
Task Order Number/Study Number: nctip-35	**Pincipal Investigator:** Golub, Eugene
Period Starting: 01/01/2002 - 09/30/2003 (Start-End Date of Study)	**Period Ending:** 09/02/2003

Task	% of Total	% of Task this quarter	% of Task to date	% of Total Complete
phase 1- Literature review	8	0	100	8
Task 1: Partner with industry	8	5	75	6
Task 2: Contact industry	15	0	100	15
Task 3: Design details	20	5	95	19
Task 4: Construction guidelines	20	25	50	10
Task 5: Complete guidelines	20	30	30	6
Task 6: Prepare report	4	25	85	3.4
Final Report	5	40	40	2
TOTAL	100 %			69.4 %

1.Progress this quarter by task:

Project Progress:The literature search is complete.
Detailed in formation has been gathered on vinyl, concrete, fiberglass, steel, aluminum, block and landscape fences.
The team is also considering the approach of providing fencing on NJDOT property by providing an easement to the adjoining neighbor toselect the type of fence from an approved list and then accepting responsibility for maintenance. This would allow for the use of landscape features that require routine maintenance that is then provided by the adjoining homeowner. This approach has been discussed with the AG's office. It is feasible and their staff is working out the details.

An interim annual report was written this quarter. This brought all of the information gathered in a single document. The various solutions studied were discussed in detail and identified as feasible or not feasible. This document has been reviewed by NJDOT and their comments are being incorporated into the report.

Current products available inthe market place have been studied to modify the basic designs to increase the life span of the product and reduce routine maintenance to the smallest level possible.

The design of all fences has been finalized.

The first draft of the final report is ready for submission.

2. Proposed activities for next quarter by task:

Finalyze the first final report.

3. List of deliverables provided in this quarter by task (product date):

Interim Annual Report.
Method to place fence on adjoining property.

4. Progress on implementation and training activities:

5. Problems/proposed solutions:

none

6. Budget summary:

Total Project Budget (# Years)	2 Year	$101,090.00
Total Project Expenditure to date		$41,409.00
% of Total Project Budget Expended		40.96%
Task Order Number/ Study Number	2 Year	nctip-35
Current Task Order Budget (# of Years)		$50,109.00
Actual Expenditure to Date Against Current Task Order		$13,000.00
% of Current Task Order Budget Expended		25.94%

Quarterly Progress Report

Project Title:	**Effectiveness of Bus Nubs for Bus Stops - Mod.1**
RFP Number: 2000-25	**NJDOT Research Project Manager:** Vincent Nichnadowicz
Task Order Number/Study Number: NCTIP-43	**Pincipal Investigator:** Daniel, Janice R.
Period Starting: 1/02/02 - 12/31/03 (Start-End Date of Study)	**Period Ending:** 09/02/2003

Task	% of Total	% of Task this quarter	% of Task to date	% of Total Complete
Task A. Perform a literature review.	5%	0	100%	5%
Task 1. Identify a limited number of urban bus stop locations that could be considered for bus nub installation.	10%	0	100	10%
Task 2. Develop from the literature or elsewhere a specification document that provides measurements and guidance for proposed test bus nubs to be built.	10%	10	85	8.5%
Task 3. Prepare plans in sufficient detail for the agreed upon test nubs to allow for contractor installation.	5%	0	70	3.5%
Task 4. Develop a methodology to evaluate effectiveness of the alternate	5%	0	90	4.5%
Task 5. Conduct a before data collection	10%	20	82	8.2%
Task 6. Install bus nubs.	20%	0%	0%	0%
Task 7. Conduct an after data collection.	10%	0%	0%	0%
Task 8. Analyze the data.	10%	50	85	8.5
Task 9. With the assistance of NJDOT and NJ Transit, develop for general publication a document explaining the rules and guidelines for the use of	5%	0%	0%	0%
Task 10. Prepare a project schedule to submit a quarterly, interim and final report that document the entire research effort.	10%	0	20%	2%
Final Report				
TOTAL	100 %			50.2 %

1.Progress this quarter by task:

During the past quarter, the research team has been involved in developing a methodology to estimate bus travel time savings with a bus nub. The methodology includes estimating the components that make up the bus travel time including: bus running time, time to stop and pickup/discharge bus patrons, bus reentry delay, and delays from other sources such as at traffic signals. The bus travel time savings is then the difference between the re-entry delay and the additional delay at the traffic signal. It is hoped that the methodology will be validated using field data. Field visits to the three locations studied including Ferry Street, Bloomfield Avenue and Cedar Lane, showed that

the re-entry delays were not significant as the buses stopped in the travel lane rather than pull to the curb. The researchers are currently identifying additional locations where data on the re-entry delays may be collected.

2. Proposed activities for next quarter by task:

During the next quarter, it is anticipated that the Draft Final Report will be completed and presented at the September quarterly meeting. The validation of the methodology through collecting re-entry delays may not be included in the Draft Final Report to be submitted at the September quarterly meeting as locations where re-entry delays are evident have not been found. The validation, however, will be submitted separately for review.

3. List of deliverables provided in this quarter by task (product date):

None

4. Progress on implementation and training activities:

None

5. Problems/proposed solutions:

The collection of bus re-entry delays will not be completed in time to include in the Draft Final Report to be submitted at the September quarterly meeting. The original study sites have not shown to be appropriate for collecting re-entry delays. The research team is currently looking for locations where re-entry delays can be measured.

6. Budget summary:

Total Project Budget (# Years)	2 Year	$118,785.00
Total Project Expenditure to date		$85,798.20
% of Total Project Budget Expended		72.23%
Task Order Number/ Study Number	2 Year	NCTIP-43
Current Task Order Budget (# of Years)		$62,906.00
Actual Expenditure to Date Against Current Task Order		$0.00
% of Current Task Order Budget Expended		0.00%

Quarterly Progress Report

Project Title:	**Assess Impacts and Potential Benefits of Traffic Signal Priority for Buses**
RFP Number: 2000-28	**NJDOT Research Project Manager:** Nick Vitillo
Task Order Number/Study Number: NCTIP-45	**Pincipal Investigator:** Daniel, Janice R.
Period Starting: 1/02/002 - 06/30/02 (Start-End Date of Study)	**Period Ending:** 09/02/2003

Task	% of Total	% of Task this quarter	% of Task to date	% of Total Complete
Phase I. Assemble, Review & Synthesize Literature	10%	0	100%	10%
Task 1. Survey Existing Systems Using Priority	15%	0	100	15%
Task 2. Identifying Promising Locations and Develop Plans	25%	0	100	25%
Task 3. Assessment of Operational Plans	25%	0	100	25%
Task 4. Prepare Reports	25%	20%	80	20%
Final Report				
TOTAL	100 %			95.0 %

1.Progress this quarter by task:

During the past quarter, having received no further comments regarding the results of the simulation model, the research team has document the work performed with the simulation model and is including it in the Final Report. It is anticipated that the Draft Final Report will be ready for presentation at the next quarterly meeting.

2. Proposed activities for next quarter by task:

The research team will respond to any comments received regarding the Draft Final Report

3. List of deliverables provided in this quarter by task (product date):

None

4. Progress on implementation and training activities:

None

5. Problems/proposed solutions:

None

6. Budget summary:

Quarterly Progress Report

Total Project Budget (# Years) 1 Year	$281,008.00
Total Project Expenditure to date	$93,980.15
% of Total Project Budget Expended	33.44%
Task Order Number/ Study Number 1 Year	NCTIP-45
Current Task Order Budget (# of Years)	$138,109.00
Actual Expenditure to Date Against Current Task Order	$93,980.15
% of Current Task Order Budget Expended	68.05%

Quarterly Progress Report

Project Title:	**Study of Optimal Travel Speed Limits for Shared Traffic**
RFP Number: 2002-28	**NJDOT Research Project Manager:** Karl Brodtman
Task Order Number/Study Number: NCTIP-043	**Pincipal Investigator:** Yang, Jian
Period Starting: 01/01/2003 - 12/31/2003 (Start-End Date of Study)	**Period Ending:** 09/02/2003

Task	% of Total	% of Task this quarter	% of Task to date	% of Total Complete
Phase 1. Literature Review	10	10	100	10
Task 1. Review Current Speed Limit Criteria	10	10	100	10
Task 2. Compare NJ Speed Limit Criteria to Others	10	10	100	10
Task 3. Review Attributes for Low-speed Roads	10	30	90	9
Task 4. Assess Data	15	10	100	15
Task 5. Identify Speed Factors	15	40	100	15
Task 6. Establish Procedure for Setting Speeds	10	50	50	5
Task 7. Identify Locations for Implementation	10	0	0	0
Task 8. Final Report	10	30	50	5
Final Report				
TOTAL	100 %			79.0 %

1.Progress this quarter by task:

We divided road categories into urban and rural, and used Logit modeling features in SAS to identify the best logisitc formulas that could predict the pedestrian/bicyclist injury severities separately for the two situations. The formulas clearly indicated the significant role that vehicle speed limits played in determining injury severities. By plugging the formulas back to the real data, we were able to confirm their accuracies. We were then able to set ideal speed limits for different roadways using the formulas as guidelines.

2. Proposed activities for next quarter by task:

We will simulate the operational conditions of roadways to test the feasiblities of the newly proposed speed limits. We will also assess the community acceptance of the speed limits. We will identify roadways in New Jersey where the new speed limits should be implemented. Final reports and all technical memorandums will be completed in the next quarter.

3. List of deliverables provided in this quarter by task (product date):

4. Progress on implementation and training activities:

5. Problems/proposed solutions:

6. Budget summary:

Quarterly Progress Report

Total Project Budget (# Years) 1 Year	$172,641.00
Total Project Expenditure to date	$85,777.00
% of Total Project Budget Expended	49.69%
Task Order Number/ Study Number 1 Year	NCTIP-043
Current Task Order Budget (# of Years)	$0.00
Actual Expenditure to Date Against Current Task Order	$0.00
% of Current Task Order Budget Expended	0.00%

Quarterly Progress Report

Project Title:	**Effectiveness of Certain Design Solutions on Reducing Vehicle Speeds - Year I**
RFP Number: 37	**NJDOT Research Project Manager:** Karl Brodtman
Task Order Number/Study Number: NCTIP-37	**Pincipal Investigator:** Daniel, Janice R.
Period Starting: 1/1/2003 - 6/30/2004 (Start-End Date of Study)	**Period Ending:** 09/02/2003

Task	% of Total	% of Task this quarter	% of Task to date	% of Total Complete
PHASE I - Literature Search	15	10	60	9
Task 1. Presentation of Findings	5	0	100	5
Task 2. Accident Analysis	20	25	100	20
Task 3. Human Factors Study	40	20	35	14
Task 4. Plan and Budget Development	10	0	0	0
Task 5. Reporting	10	5	5	0.5
Final Report				
TOTAL	100 %			48.5 %

1.Progress this quarter by task:

During the past quarter, the research team has been involved in completing the accident analysis to identify locations with high pedestrian and bicycle accidents. Initially, locations were identified using only fatal crashes. Additional locations have been identified using the NJDOT accident database which includes all accidents. State routes which have been identified for further study to determine whether traffic calming may be appropriate in reducing the number of accidents include: Route 501 (Hudson County); Routes 33, 35, and 36 (Monmouth County); Route 17 (Bergen County); Route 28 (Union County); Route 49 (Cumberland/Salem County); Route 30 (Atlantic County); and Routes 18 and 35 (Middlesex County). Field visits have been performed on about half of the sites to determine the sites with the greatest potential for conducting the human factor studies. The research team has also been involved in completing the visual preference survey for Route 27. The web site has been designed and developed with the questions to be used within the survey being modified to capture the essential information for assessing the stated preference of homeowners and businesses within the study area.

2. Proposed activities for next quarter by task:

During the next quarter, the research team hopes to administer the human factors study for Route 27. Route 27 will be used to further refine the elements of the human factors study.

3. List of deliverables provided in this quarter by task (product date):

Technical Memoradum on the national and international literature search.

4. Progress on implementation and training activities:

5. Problems/proposed solutions:

6. Budget summary:

Total Project Budget (# Years)	1 Year	$153,232.00
Total Project Expenditure to date		$47,288.76
% of Total Project Budget Expended		30.86%
Task Order Number/ Study Number	1 Year	NCTIP-37
Current Task Order Budget (# of Years)		$76,822.00
Actual Expenditure to Date Against Current Task Order		$47,288.76
% of Current Task Order Budget Expended		61.56%

Quarterly Progress Report

Project Title:	**Mobility Information Needs of Limited English Proficiency People In NJ - Year I**
RFP Number: 2002-20	**NJDOT Research Project Manager:** New Jersey DOT
Task Order Number/Study Number: NCTIP-039	**Pincipal Investigator:** Liu, Rachel
Period Starting: January 1, 20 - December 20 (Start-End Date of Study)	**Period Ending:** 09/02/2003

Task	% of Total	% of Task this quarter	% of Task to date	% of Total Complete
Literature Review	10	100	100	10
Idnetify Source of Infomatin on LEP Groups	5	100	100	5
Identify and Classify the NJLEP population	5	100	100	5
Survey of LEp population	10	90	90	9
Survey of transit agencies	10	20	20	2
Survey of international oriented activity centers	10			
survey of selected international transit agencies	10	10	10	1
Final Report				
TOTAL	100 %			32.0 %

1.Progress this quarter by task:

To date, we have conducted literature review and are in the process of composing the literature reveiw Technical Memorandum.

We also searched the data sources of LEP population, and contacted various groups for future surey

2. Proposed activities for next quarter by task:

Conduct surveys of community groups in NJ and analysize the mobility information needs of such groups

3. List of deliverables provided in this quarter by task (product date):

Technical Memorandum on demographics of LEP travelers in NJ

4. Progress on implementation and training activities:

In Progress

5. Problems/proposed solutions:

6. Budget summary:

Quarterly Progress Report

Total Project Budget (# Years) 2 Year	$230,499.00
Total Project Expenditure to date	$57,600.00
% of Total Project Budget Expended	24.99%
Task Order Number/ Study Number 1 Year	NCTIP-039
Current Task Order Budget (# of Years)	$161,377.00
Actual Expenditure to Date Against Current Task Order	$15,768.00
% of Current Task Order Budget Expended	9.77%

Quarterly Progress Report

Project Title:	**Survey of Transit/Rail Freight Interactions**
RFP Number: 2002-19	**NJDOT Research Project Manager:** NJ DOT
Task Order Number/Study Number: NCTIP-040	**Pincipal Investigator:** Liu, Rachel
Period Starting: January 1, 20 - December 20 (Start-End Date of Study)	**Period Ending:** 09/02/2003

Task	% of Total	% of Task this quarter	% of Task to date	% of Total Complete
Literature Review	10	100	100	10
Survey of Peer Transit Agencies	40	80	80	32
key factors of successful interaction	30	50	50	15
Final Report				
TOTAL	100 %			57.0 %

1.Progress this quarter by task:

To date, we have conducted literature and are in the process of compiling the technical memorandum documenting the literature gathered and topics that pertinent to this research project.

2. Proposed activities for next quarter by task:

Survey transit systems composed of various commuter rail, light rail, and havey rail systems around the United States. One of the concentrated surveys will be conducted at the APTA commuter raill conference

3. List of deliverables provided in this quarter by task (product date):

Technical Memorandum of Literature Review

4. Progress on implementation and training activities:

IN progress

5. Problems/proposed solutions:

6. Budget summary:

Total Project Budget (# Years) 1 Year	$129,313.00
Total Project Expenditure to date	$39,638.00
% of Total Project Budget Expended	30.65%
Task Order Number/ Study Number 1 Year	NCTIP-040
Current Task Order Budget (# of Years)	$129,313.00
Actual Expenditure to Date Against Current Task Order	$19,638.00
% of Current Task Order Budget Expended	15.19%